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ENZYME DISCOVERED BY NIDR SCIENTIST

An enzyme called basic carboxypeptidase (BCP) has been discovered at NIDR. This hitherto unknown substance was isolated from bovine pancreas by Dr. J. E. Folk, Oral and Biological Chemistry, NIDR.

BCP is particularly significant in that it is associated with proteins. Not only are proteins the main structural components of the body, but an understanding of their function in the biological activity of organs and tissues is important in finding answers to problems of the degenerative and organic diseases.

Basic carboxypeptidase must be distinguished from a similar enzyme, which is known as carboxypeptidase (CP) and is essential to the digestive process.

Dr. Folk finds that the function of the new enzyme (BCP) is to release two amino acids, lysine and arginine. These amino acids are not affected by the previously known carboxypeptidase.

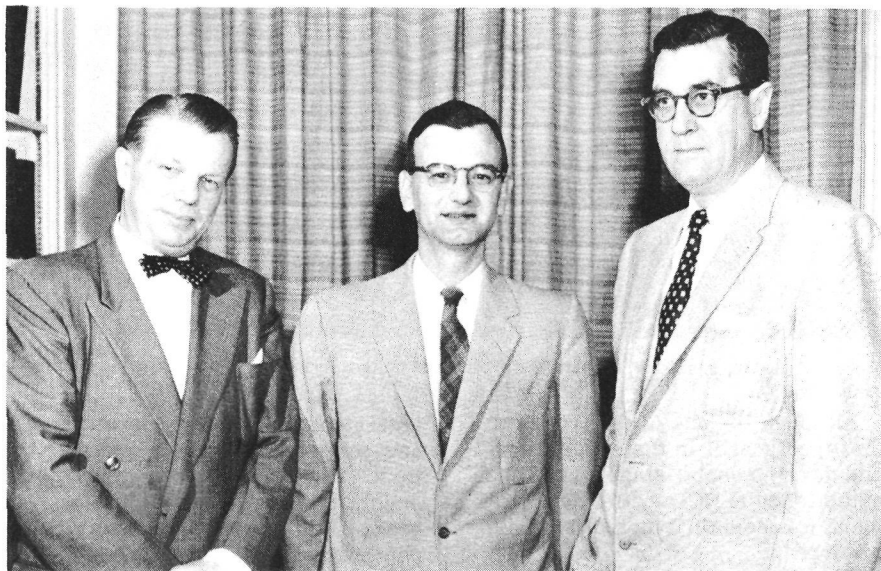
Dr. Folk's findings show that the significance of the new enzyme is twofold. First, it may be responsible for rapid availability of the essential amino acid, lysine, as well as the important arginine residue from ingested protein. Second, when used with other enzymes in research laboratories, it may shed further light on the molecular structure of proteins.

Because of the importance of this discovery and the interest of investigators in NIAMD, joint studies of a more elaborate nature are already under way to explore further the characteristics of this additional protein enzyme.

The existence of a new type carboxypeptidase has been indicated in studies with proteins by Drs. Jules Gladner and Koloman Laki, both of NIAMD.

(See Picture, Page 4)

RHEUMATISM ASSOCIATION MEETS HERE



Dr. James A. Shannon, Director of NIH (right), and Dr. Floyd S. Daft, Director of NIAMD (left), welcome Dr. William D. Robinson, President of the American Rheumatism Association, at the recent meeting of the Association at NIH.

The American Rheumatism Association held its Third Interim Scientific Session in the Main Auditorium of the Clinical Center on November 30.

The meeting was attended by some 350 members of the medical profession especially interested in research activity in the field of rheumatic diseases.

The program consisted of the presentation of 16 papers by some of the most prominent rheumatologists in the country, and a tour of the laboratories of NIAMD.

Two scientists from NIAMD presented papers. These were "The Physiological Disposition and Metabolic Fate of Cortisone in Man" by Ralph E. Peterson, and "Studies on Hyaluronic Acid Synthesis by Human Synovial Tissue Slices" by K. Lemone Yielding, senior author.

This is the second year the meeting has been held at NIH.

NINDB EXHIBIT WINS AWARD

The NINDB exhibit "A Comprehensive Attack on Cerebral Palsy" recently received the First Award of the American College of Obstetricians and Gynecologists during the fifth annual clinical meeting of the College in Chicago, Illinois.

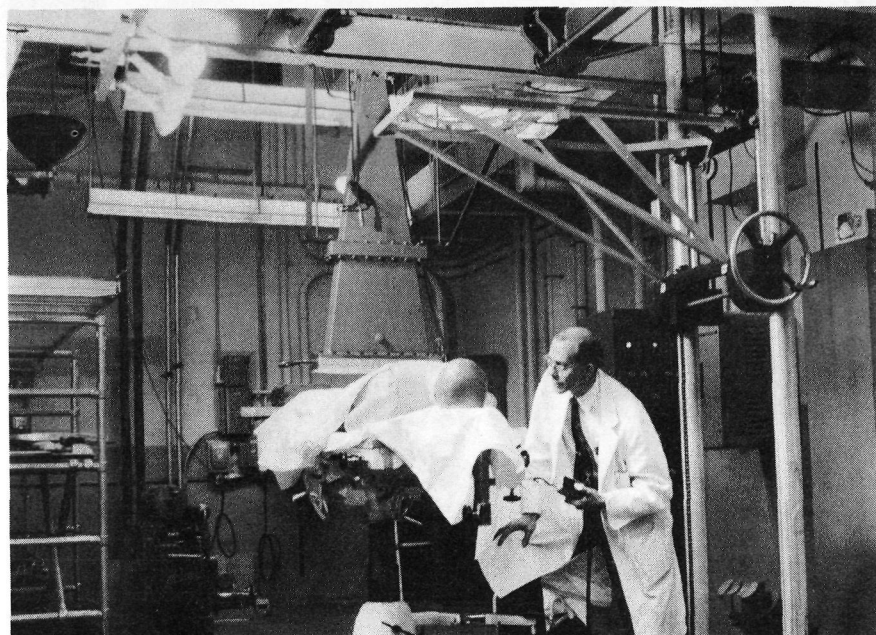
This scientific and educational exhibit presents a concept of the collaborative field investigations that will be coordinated by NINDB. This concept proposes a multidisciplinary attack on the complex causative factors that result in cerebral palsy, mental retardation, and many other crippling neurological and sensory disorders of infancy or early childhood.

The exhibit also includes 60 color plates. Some of the suspected

(See Exhibit, Page 4)

Skin Treatment by Electron Beam Therapy

No. 175 in a Series



Robert W. Swain, physicist, adjusts the position of patient (manikin) in preparing for electron beam therapy.

Although the use of electron beam therapy is still in the experimental and developmental stage, it has been established at NCI as effective treatment for certain types of skin disorders.

Electron beam therapy is administered by a 3-million volt Van de Graaff Accelerator that has been in use experimentally at NIH for approximately a year and a half.

The Accelerator is housed as a single unit on three floors and is the only one of its type in existence. It is operated from the control center adjacent to the treatment room.

During exposure to electrons, the patient alone is in the treatment room. However, the patient and the operation of the mechanism are observed through small windows and by means of closed circuit television.

The patient is moved under the electron beam on a table driven by cables, and is sprayed with electrons accelerated to any energy of 2.1 million volts. The electron beam is projected through a magnetic deflection coil which causes it to oscillate in a pendulum-like sweep. It then emerges through a thin aluminum window.

Electron beam therapy has a definite advantage over X-ray for the

treatment of skin disorders. X-ray has a deep penetration and may be toxic to bone marrow and other underlying tissues, while an electron beam of this energy has a maximum penetration of only 1 cm.

The Van de Graaff Accelerator has been used at NCI primarily for treatment of mycosis fungoides. This is a rare chronic skin disease characterized by firm, reddish lesions that are painful and tend to spread and ulcerate. The results of electron beam therapy have shown that this method of treatment may relieve itching and effect a temporary disappearance of many of the lesions.

The development and operation of the Van de Graaff Accelerator is an activity of the Radiation Branch, NCI, headed by Dr. J. Robert Andrews.

NIH RECORD

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Publication Preview

The following manuscripts were received by SRB Editorial Section between November 10 and November 26.

Allen, G. Genetic aspects of mental disorder.

Alvord, E. C., et al. Clinico-pathologic observations on the early lesion in experimental allergic encephalomyelitis.

Ames, B. N. The biosynthesis of histidine: L-histidinol phosphate phosphatase.

Ball, W. C., et al. Ascites formation without sodium intake in dogs with right-sided congestive heart failure and dogs with thoracic inferior vena cava constriction.

Bavetta, L. A., et al. Xanthine oxidase studies in pair-fed rats on diets marginally deficient in lysine.

Bogdanski, D. F., et al. The distribution of serotonin, 5-hydroxytryptophan decarboxylase and monoamine oxidase in brain.

Belkin, M., et al. The effect of reserpine and chlorpromazine on sarcoma 37.

Bell, J. A. Clinical manifestations of pharyngoconjunctival fever.

Bell, J. A. Epidemiology of pharyngoconjunctival fever.

Brackett, F. S., et al. Recording oxygen concentration and rate of exchange.

Briggs, G. M. Estrogen residues in meat - public health aspects.

Brodie, B. B., et al. On a role for serotonin and norepinephrine as chemical mediators in the central autonomic nervous system.

Bryan, W. R., et al. Rous sarcoma virus - the purification problem.

Burgdorfer, W. Artificial feeding of ixodid ticks for studies on the transmission of disease agents.

Chernick, S. S., et al. Dinitrophenol and the site of the respiratory lesion in dietary necrotic liver degeneration.

Gunkel, R. D., et al. Automatic intensity control in testing dark adaption.

Habel, K., et al. Relationship of virulence for mice to patient source of type 2 polioviruses.

Heart Information Center, NHI. Heart disease, 1956.

Hueper, W. C. The role of occupational and environmental air pollutants in the production of respiratory cancers.

Kaufman, S. The enzymatic conversion of phenylalanine to tyrosine.

Kielley, W. W., et al. Oxidative phosphorylation in sonic extracts of rat liver mitochondria.

Krueger, D. E. Measurement of prevalence of chronic disease by household interviews and clinical evaluations.

Kurland, L. T. Cerebral palsy epidemiologic studies.

Leighton, J., et al. Effects of a podophyllotoxin derivative on tissue culture systems in which human cancer invades normal tissue.

Leighton, J., et al. The similarity in histologic appearance of some human cancer and normal cell strains in sponge-matrix tissue culture.

Lillie, R. D. Metal reduction reactions of the melanins: Histochemical studies.

NIH Spotlight



Lucy H. Chaconas

The charming French accent and vibrant personality of Lucy Chaconas, NIMH, unmistakably reveal her Parisian background. Born and educated in France, Lucy met her husband in Paris and became an American citizen by marriage. Since that time she has lived in Washington, and although she returns to France frequently to visit her family and friends, her interests and loyalties are centered here.

Lucy has been with the Publications and Reports Section of NIMH since coming to NIH seven years ago. As publications editor she is responsible for processing the clearance of professional and scientific manuscripts, and for recommending the quantity of mental health publications that should be purchased. She keeps a current record of funds available for this purpose. By organizing a new system of rechecking price quotations on purchased material, Lucy has been able to save NIMH a substantial amount of money and has earned a reputation for thoroughness and thrift.

During World War II, Lucy was outstandingly active as a full-time volunteer. She joined the American Red Cross Motor Corps, served as chairman of the Blood Donor detail, and took an active part in other Red Cross activities. In addition, she was chairman of the Community War Fund for the United Nations, representing the American Relief for France. In recognition of her able and unselfish services, she received the coveted Army-Navy "E" award and a certificate of merit from the President of the United States.

CREDIT UNION ANNUAL REPORT

Examiners from the Bureau of Federal Credit Unions recently completed their annual examination of the NIH Credit Union. They reported to the Board of Directors that the Credit Union has made excellent progress in the past year both in growth and service to members. They estimated that, over the period of its existence, the Credit Union has saved its members \$298,000 in interest on loans as compared with what might have been charged by other lending agencies.

One problem all Federal credit unions face is that of handling payday crowds. The examiners observed operations on a payday and complimented the Board on the expeditious handling of the lines. This speed-up is due to the recently inaugurated policy of taking level payments, figuring the interest later, and returning the book by mail. The new pay-by-mail envelopes are also proving a great time-saver.

For a full report on the Credit Union's progress for the year, be sure to attend the annual meeting on January 16.

The variety and range of Lucy's interests and accomplishments are remarkable. Because of her knowledge of French and Spanish, she has been able to help with translations of foreign mail and publications that come to NIMH. She has studied voice for eight years, has appeared on radio and benefit shows for charity, and is active as a soloist in her church choir. An occasional game of golf and playing the piano also take up her spare time.

But her most delightful interest, Lucy says, is her two small grandsons, aged 2 and 7. Her daughter Kaye lives in nearby Arlington, so Lucy finds many opportunities to be with them despite her busy schedule. Her husband, Nicholas T. Chaconas, a prominent Washington businessman, died in 1946.

Sometime in the next few years, Lucy plans to join friends in a complete tour of Europe. During her trip abroad last year she was able to make a pilgrimage to Lourdes, and of course to see friends and familiar sights in her beloved city, Paris.

Lillie, R. D., et al. Metal reduction reactions of the melanins: Silver and ferric ferricyanide reduction by various reagents in vitro.

Lillie, R. D. The xanthohydroly reaction for pyrroles and indoles in histochemistry: Zymogen granules, lens, enterochromaffin and melanins.

Maling, H. M., et al. Hypersensitivity of the heart to epinephrine and norepinephrine following experimental coronary artery occlusion.

Mehler, A. H. Alternate pathways of carbohydrate metabolism.

Mehler, A. H. Reaction of CoA.

Mehler, A. H. Pyridine nucleotides.

Mehler, A. H. Pyruvate oxidation and acetyl CoA formation.

Mehler, A. H. Oxidation-reduction potentials.

Mehler, A. H. Free energy and the concept of bond energy.

Mehler, A. H. Hydrolysis of peptides and proteins.

Mehler, A. H. The Krebs citric acid cycle.

Miller, A. D., et al. The epidemiology of reading disabilities; some methodological considerations and early findings.

Perlowagora-Szumlewicz, A., et al. Studies on the oxygen consumption of *Australorbis glabratus* eggs.

Perry, V. P., et al. Some recent studies with tissue culture as related to tissue transplantation.

Peterson, R. E., et al. Suppression of biosynthesis of adrenal cortical steroids in man by amphenone.

Peticolas, W. L. Charge-transfer complexes between chloranil and polycyclic aromatic hydrocarbons.

Potter, M., et al. Abnormal serum protein and bone destruction in a transmissible mouse plasma cell neoplasm (multiple myeloma).

Rosenthal, S. M., et al. A factor in human gamma globulin preparations active against *Pseudomonas aeruginosa* infections.

Shacter, B. Choline oxidase activity of L4946 leukemic cells of mice.

Sjoerdsma, A., et al. Further observations on patients with malignant carcinoid.

Smith, R. L. Mortality attributed to cancer among Hawaiians and Filipinos of Hawaii and other racial groups of the United States and Hawaii.

Smith, R. L. Recorded and expected mortality among the Indians of the United States with special reference to cancer.

Stewart, H. L. United States of America National Committee on the International Union Against Cancer.

Stewart, H. L. Report of the Committee on Geographic Pathology of Cancer of the Research Commission of the International Union Against Cancer.

Stewart, S. E., et al. The induction of neoplasms with a substance released from mouse tumors by tissue culture.

Tosteson, D. C., et al. The coupling of potassium transport with metabolism in duck red cells. II. Effect of adenosine and other substrates.

Warnhoff, E. W., et al. Alkaloids of *Amaryllidaceae*. X. The structure of caranine.

Witkop, B. Quebrachamine. I.



R & W NOTES

The annual R & W meeting will take place December 12 at 1:00 p.m. in Wilson Hall. On the agenda are election of officers and a short report of 1956 activities. A variety of door prizes will be given, including a \$25 savings bond. The Coca-Cola and Canteen Vending Machine Companies have donated boxes of candy, several cases of cokes, and other gifts to be awarded as prizes. All R & W members are encouraged to attend.

Because of the continued loss of coke bottles, the price of Coca-Cola at several vending machines will be raised to \$.10.

The annual Miss NIH Contest will not be held this year because of a ruling by the Bethesda Chamber of Commerce that all contestants be residents of Bethesda and under 18 years of age.

The Camera Club will meet Wednesday evening, December 12, at 7:30 p.m. Dr. Thomas A. Burch, NIAID, will present an interesting program on the fundamentals of motion picture photography. In addition to showing his own motion pictures, Dr. Burch will discuss continuity, length of scenes, organization of material for stories, and other material that will also be of interest to still photographers. The meeting will be held in Bldg. 10, Room 2N-238.

NEW PARKING PERMITS ISSUED

A new parking system, utilizing red and green permits, has recently been instituted at NIH.

The red parking permit system provides reserved parking spaces in three established areas. Persons eligible for reserved parking will be assigned space by the Plant Safety Branch, DBO, with the understanding that they may park only in the lots to which they are assigned.

Special parking areas have been set aside by PHS for holders of green parking permits. These permits are available to those individuals whose jobs require them to drive either their own cars or Government vehicles in the performance of official duties. The permits will be issued on the basis of need and may be obtained from Administrative Officers.

SYMPHONY PRESENTS CHRISTMAS CONCERT

The Montgomery Symphony Orchestra, under the direction of Mr. Chester J. Petranek, will present a Christmas Concert on December 17 at 8 p.m. in the Clinical Center Auditorium. The concert is being sponsored by R & W, and will be open to patients, employees, and their friends and families.

The program will include music in a holiday mood. Scheduled for presentation are Victor Herbert's "March of the Toys," Corelli's "Christmas Concerto," and Tchaikowsky's famous "Nutcracker Suite."

Several of the 80 semi-professional musicians in the orchestra are employed at NIH. The concert is being presented free of charge.

EXHIBIT Contd.

etiologic factors in cerebral palsy are portrayed.

Forty-eight of the plates were prepared from specific studies of the brain of newborn infants and of infants with neurologic damage. These studies are now in progress in the Department of Obstetrics and Neurology of the Johns Hopkins Medical School and Hospital. Other plates were made from experimental studies at NINDB's Laboratory of Neuroanatomical Sciences under Dr. William F. Windle.

NIH Scientists Return From Tour of Far East

Dr. Olaf Mickelsen, Chief, Laboratory of Nutrition and Endocrinology, NIAMD, recently returned to NIH from a month's tour of the Near and Middle East. He was accompanied by another NIAMD member, Dr. Arnold S. Schaefer, who is executive director of an interdepartmental committee on nutrition for national defense.

As members of a nutritional and medical task force headed by Dr. Frank B. Berry, Assistant Secretary of Defense for Health and Medical Affairs, they inspected medical facilities and hospitals in Iran, Iraq, Pakistan, Turkey, Greece, Ethiopia, Libya, and French Morocco. As representatives of the Public Health Service, they made a study of the nutrition problems of the people in the areas visited.

While in Teheran, Iran, they attended a meeting of medical officers of Iran, Iraq, Pakistan, Turkey, Great Britain, and the United States to review the findings of recent nutritional surveys made in Iran and Pakistan and to discuss possible future surveys.

Dr. Mickelsen recently accepted an invitation to serve as a member of the Advisory Board of the Journal of Agricultural and Food Chemistry.

DR. FOLK INVESTIGATES PROTEIN ENZYME



Dr. J. E. Folk, NIDR, at work on material pertaining to characteristics of the newly discovered protein enzyme.